

PATENT SPECIFICATION



Application Date: Oct. 9, 1922. No. 27,287 / 22.

206,666

Complete Accepted: Nov. 16, 1923.

COMPLETE SPECIFICATION.

Improvements in and relating to Cold-presses for the Manufacture of Rivets, Screws, Wire-nails and the like.

I, JOSEPH KUHNE, of Wolfsgasse 14, Iserlohn, Province of Westphalia, Germany, and of German nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to cold-presses for making rivets, screw-blanks, wire-nails and the like, and especially to a cold-press of the type in which the work-piece is, during the heading operation, held in a divided clamping-die which is closed by means of a lateral pressure member.

In the known cold-presses of this type the die-holder consists of a prismatic body which is wedge-shaped in longitudinal section and is inserted from above in a corresponding slot or recess in the back wall of the frame of the machine. The slot, being open in front and on top whereby the wall of the frame takes the shape as it were of a fork, results in a very considerable weakening of this wall, so that, both on account of the bursting pressure exerted on the die by the work-piece when being headed and also on account of the lateral pressure which is used for closing the said divided die, the wall springs apart, which means of course, that on the one hand a detrimental strain is put on the cast wall of the frame, while on the other hand the position and shape of the clamping die is injured. In order to avoid a fracture of the rear wall of the frame, this must be exceedingly strongly constructed, so that the machine becomes very heavy and expensive. Further, the accurate machining of the prismatic die-holder and the making of the dovetail slot or recess in the wall of the frame

for its reception is difficult, laborious and costly.

All these drawbacks are, according to the invention, overcome by making the die-holder in the form of a cylindrical body, which is inserted from the front in a cylindrical recess or aperture in the back wall of the frame of the machine. The bifurcation of the wall is thereby eliminated and it is closed also above the die-holder. The wall can consequently be considerably less strongly constructed than formerly without the danger of spring action or of a fracture occurring, owing to the pressure of the die or the lateral pressure and the weight of the machine is therefore considerably reduced. Further, the machining of the cylindrical die-holder which can simply be turned on a lathe, and of the recess for its reception in the wall of the frame, which can be drilled, is quite simple, takes less time and is therefore cheap.

An embodiment of the invention is illustrated by way of example in the accompanying drawing, in which Fig. 1 is a plan view of the part of a cold press for the manufacture of wire-nails, rivets or the like with which the invention is concerned.

Fig. 2 a front elevation of the back wall of the frame with the die-holder inserted, and

Fig. 3 a vertical section through this wall of the frame in the axial direction of the die-holder.

In the drawing, Figs. 2 and 3 are drawn on a larger scale than Fig. 1.

Referring to the drawings, 1 is the back wall of the frame which connects together the two longitudinal walls 2 and 3 of the press. The front side of the wall 1 is provided with a cylindrical aperture or recess 4 which is drilled in

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it and is intended for the reception of the die-holder 5. The latter consists of a cylindrical body which is inserted from the front in the recess 4. For the purpose of fastening it in the wall 1 and securing it against rotation the upper side of the die-holder 5 is provided with a suitable flat 6 with which the member 8, which is also cylindrical and is inserted in an aperture 7 drilled in the wall of the frame, engages. The underside of the member 8 is also flattened in a wedge-like manner and is drawn into the drilled aperture by means of a bolt 9 having a nut 10. Between the die-holder 5 and the bottom of the cylindrical recess 4 a steel plate 11 can be fitted, in known manner, for the purpose of taking the axial upsetting pressure.

The die-holder 5 is provided with openings for the reception of the clamping die which may be fitted in any desired known manner. In the example illustrated, the front of the die-holder has a rectangular opening 12 for the reception of the divided die 13, 14 and of a pressure piece 15 on which, during the upsetting process, the lateral pressure member or slide 16 which is movable transversely across the wall of the frame, acts for the purpose of holding the die closed, and also a drilled hole for the reception of the feeding-sleeve 18 for the wire to be worked. The halves 13, 14 of the die and the sleeve 18 can be fixed in the die-holder in any desired known manner. In order to keep the die closed by means of the lateral pressure member or slide during the application of the upsetting pressure, the lateral pressure member or slide 16 is connected, by means of a coupler 23 which operates in the manner of a toggle-lever, with a controlling slide 24 which is guided in the side wall 3 of the frame of the press and is reciprocated backwards and forwards, by means of a connecting-rod 19 and an eccentric 21 arranged on the crank-shaft 20 of the press, in conformity with the press-carriage which is not illustrated in the drawing.

In presses in which the wire is fed directly into the clamping die, the side feeding sleeve 18 is omitted.

In connection with warm-presses for forging screw-nuts in which a flat work-piece, after being severed from a heated bar, is first punched by two punches arranged over against each other, and then pressed in a shaping-die or swage also by means of two punches entering the die from opposite ends, it has already been proposed to use a cylindrical die-holder which is arranged in a cylindrical bore of the machine-table.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A cold-press for the manufacture of rivets, screws, wire-nails and the like in which the work-piece is, during the heading operation, held in a divided clamping-die which is closed by a lateral pressure member thereby characterised that the die-holder (5) consists of a cylindrical body and that the wall (1) of the frame of the press which holds the die-holder (5) contains a cylindrical recess or aperture in which the die-holder (5) is inserted from the front.

2. A cold-press in accordance with Claim 1 thereby characterised that the die-holder (5) is held in the wall (1) by means of a cylindrical member (8) which is fitted in a bore hole (7) in said wall and of which the side facing the die-holder (5) is flattened in the manner of a wedge and co-acts with a corresponding flat (6) on the die-holder (5).

3. A cold-press substantially as described with reference to the accompanying drawing.

Dated this 3rd day of September, 1923.

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[This Drawing is a reproduction of the Original on a reduced scale.]

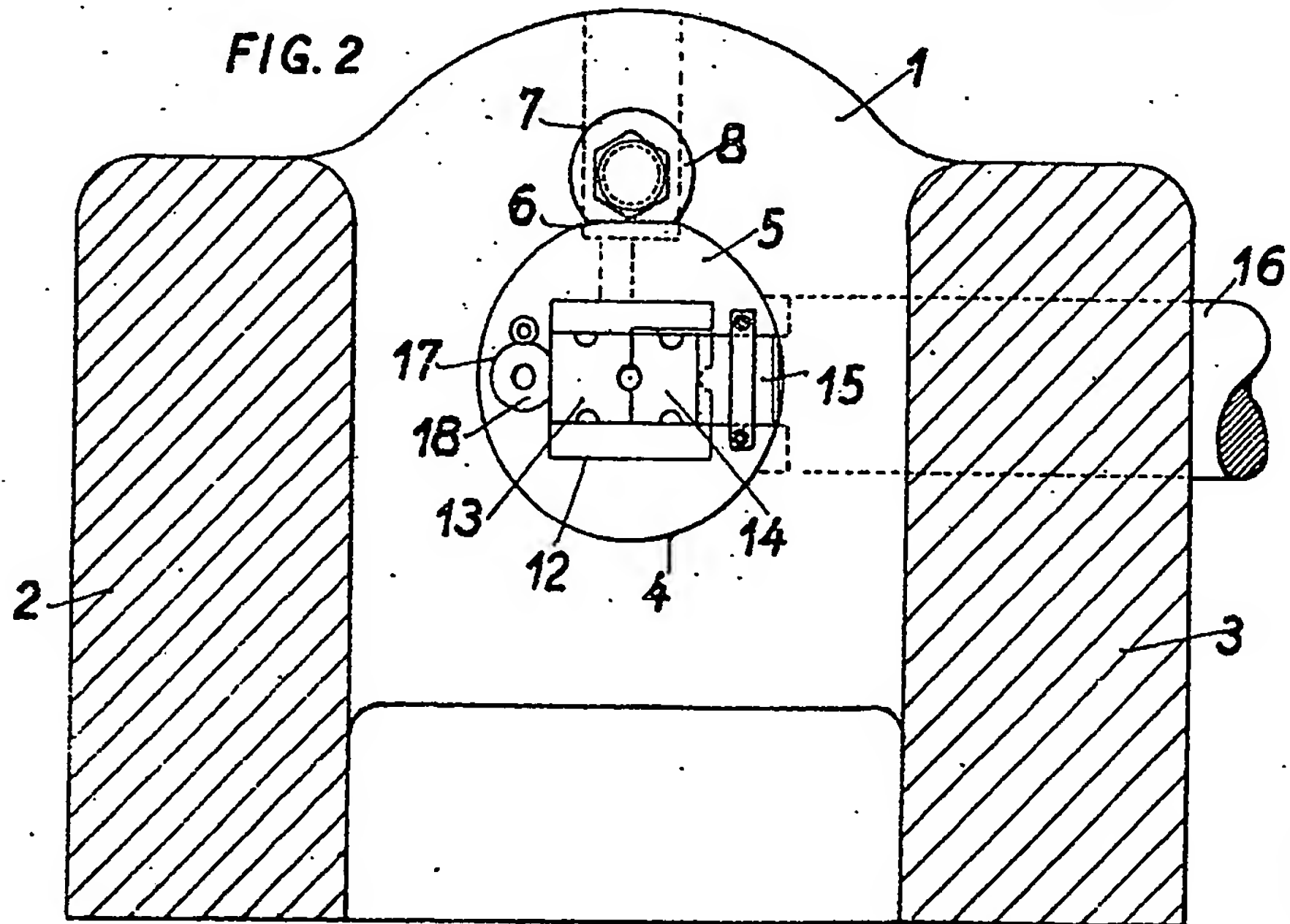
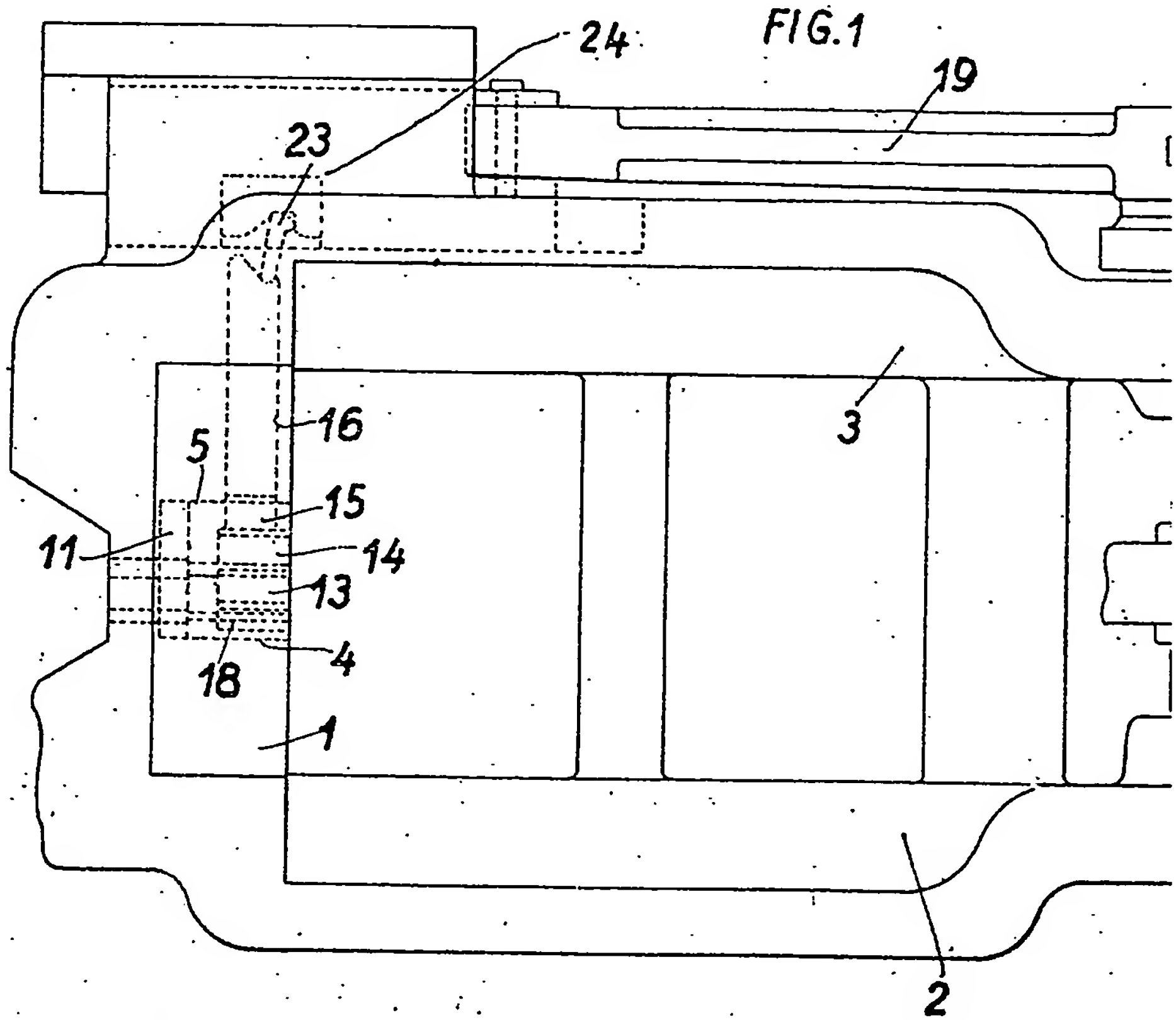


FIG. 1

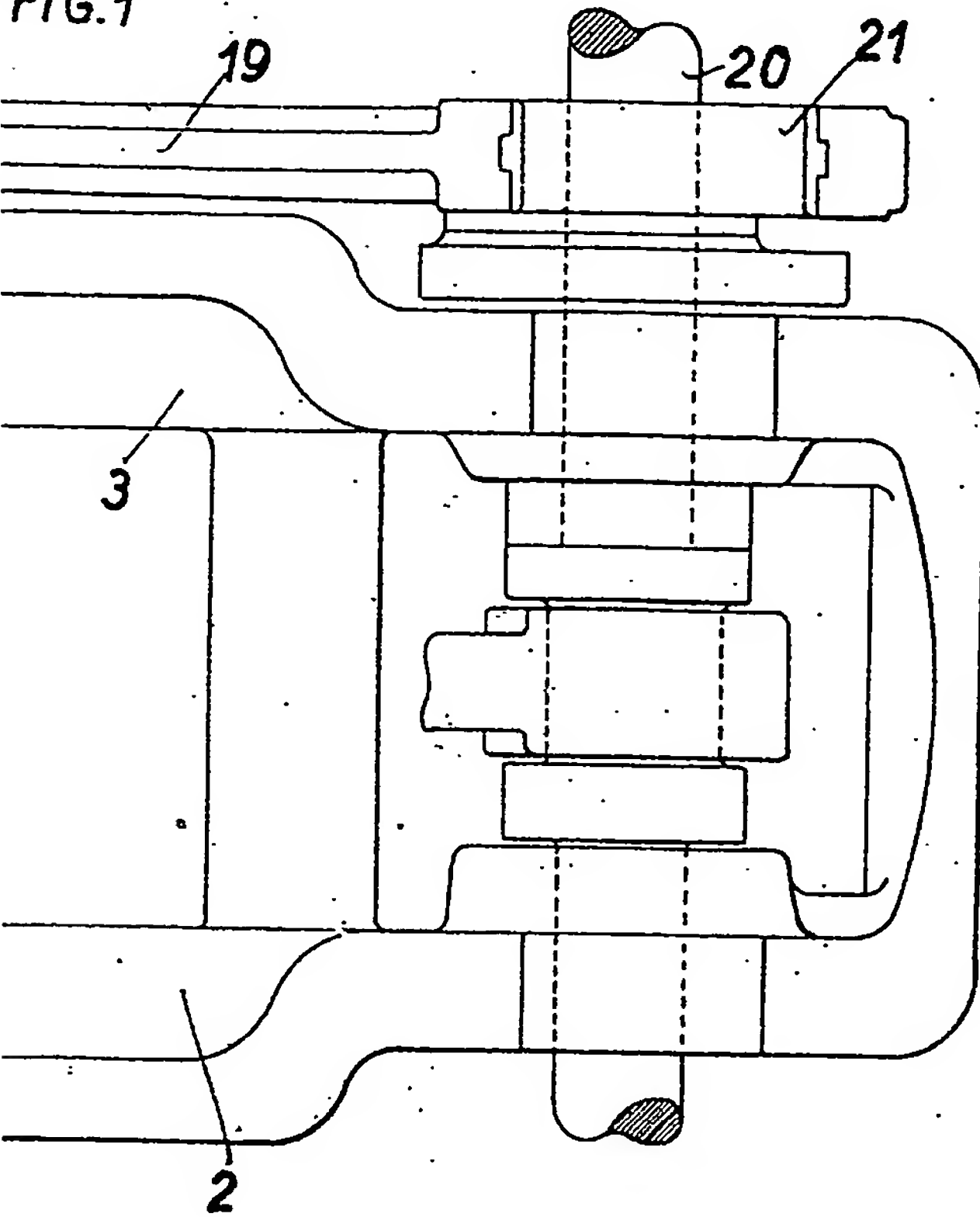
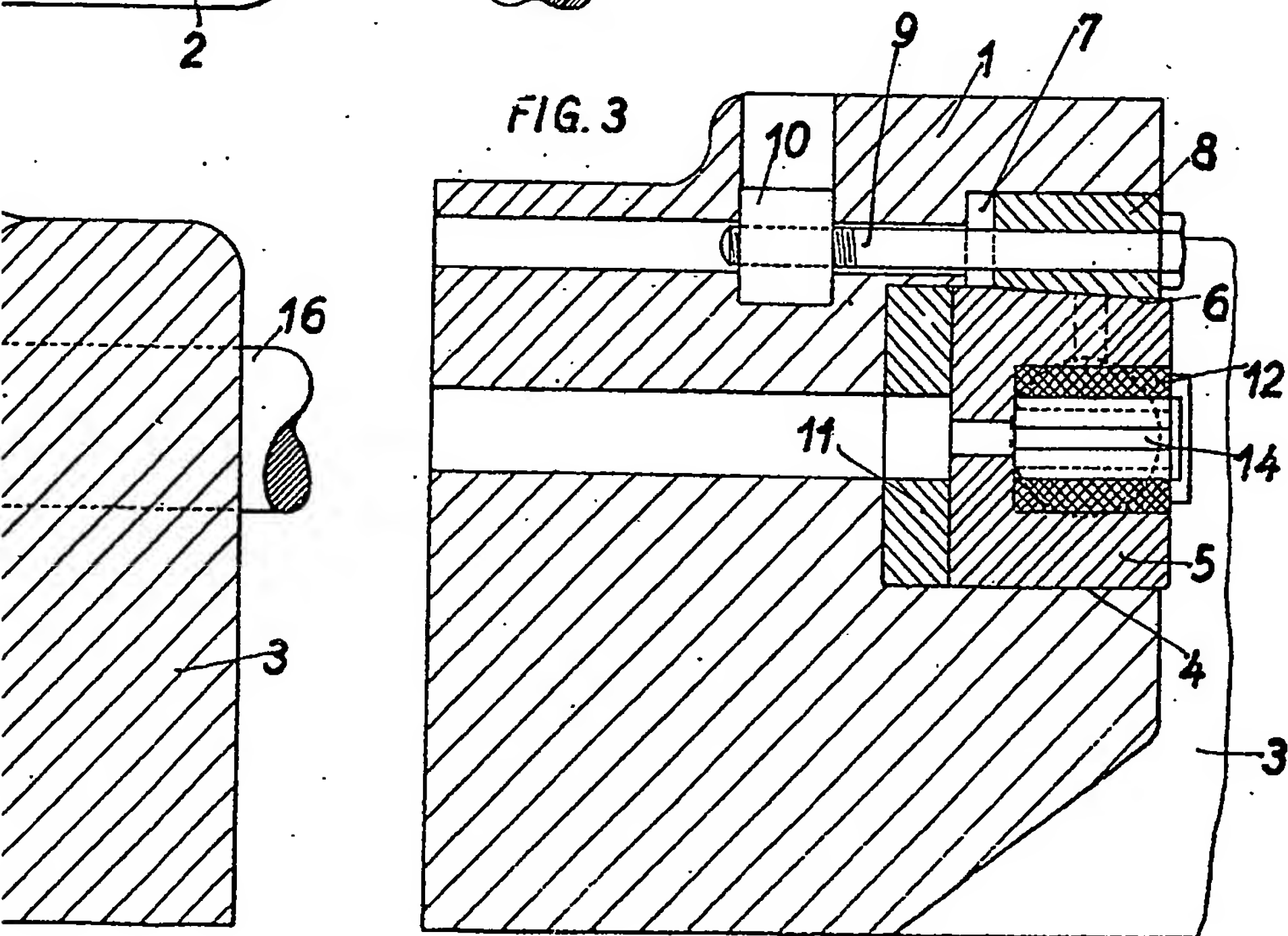
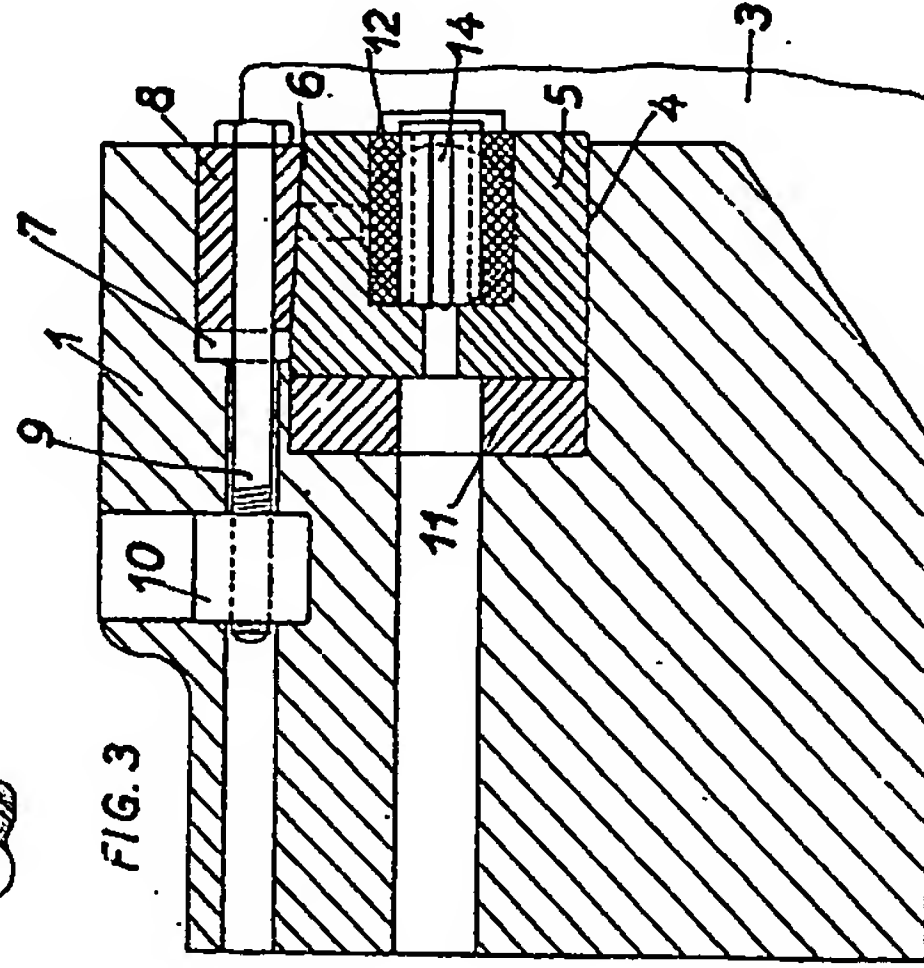
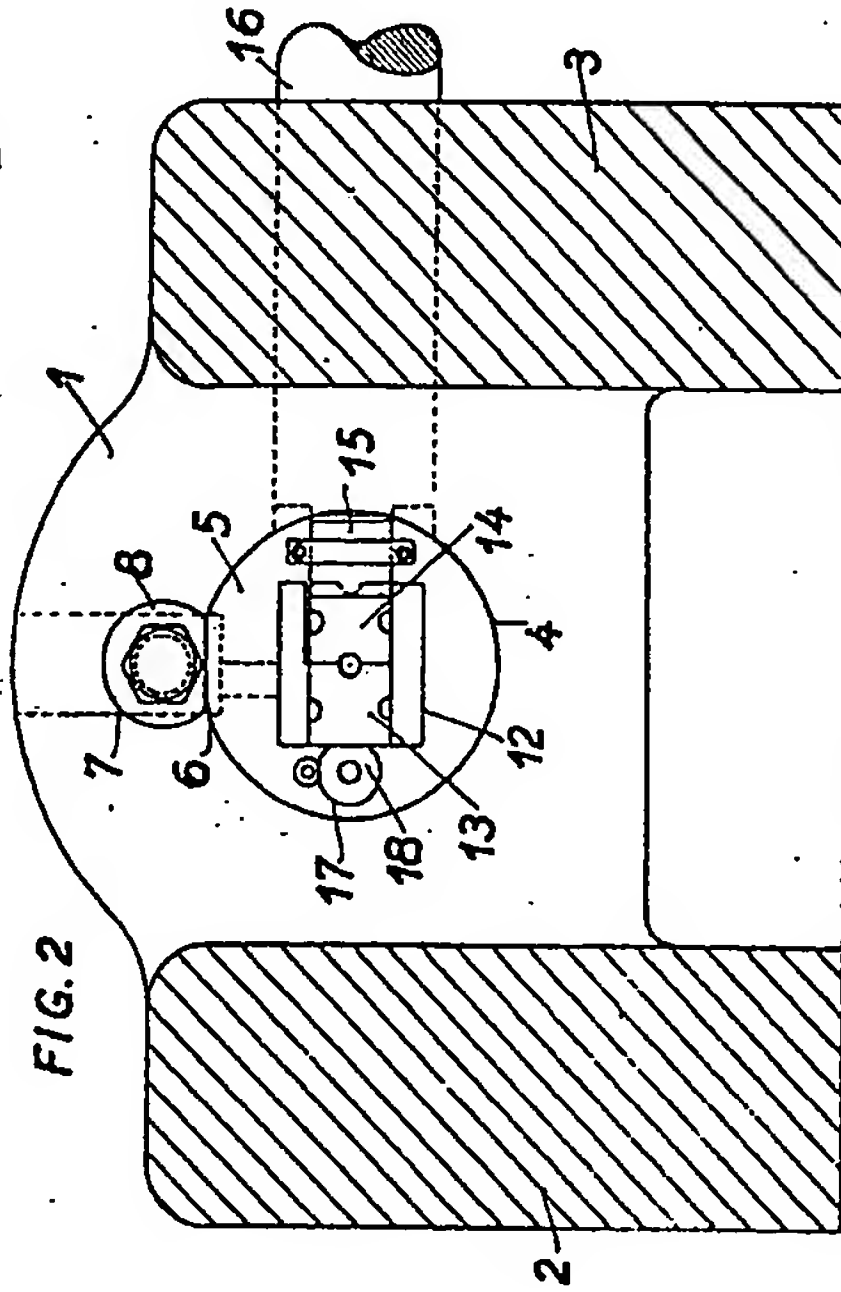
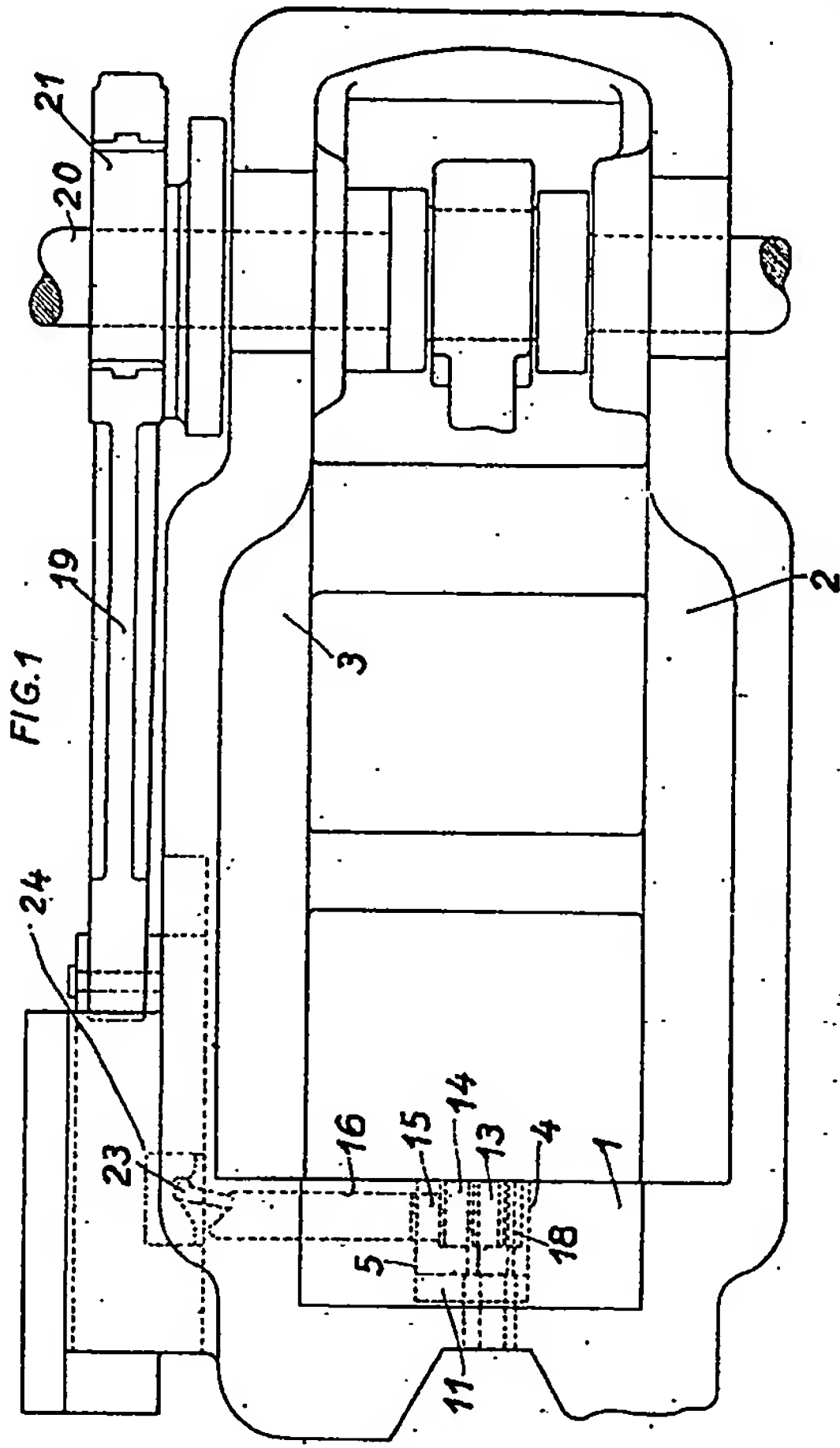


FIG. 3





[This Drawing is a reproduction of the Original on a reduced scale]